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Oral
(Invited Talk)
A complete theory of how the Sun generates the solar wind and produces eruptive events that create and modulate the heliosphere requires unifying critical stages of their formation and outflow by integrating solar spectra and particle/field measurements at larger heliocentric distances. Future Polarimeter to UNify the Corona and Heliosphere (PUNCH) will provide a power link between Sun's global morphology and in situ observations by offering continuous spatial coverage of the inner heliosphere to characterize and follow newly emanating plasma. While complementary in situ measurements taken throughout PUNCH's field of view can offer insight to the local plasma conditions directly relating large-scale features to processes actively driving its evolution as well as enabling a connection to its coronal source. In particular, I will discuss how observations of minor ions can effectively map structures within the PUNCH observations and to the near-sun environment that reveal the plasma's coronal birthplace, magnetic environment, driver of its formation, and early thermal structure to couple solar-heliospheric phenomena.
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